

QA: QA

**U.S. DEPARTMENT OF ENERGY
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT**

OFFICE OF QUALITY ASSURANCE

AUDIT REPORT OQAC-BSC-03-04

OF

BECHTEL SAIC COMPANY, LLC

AT

THE YUCCA MOUNTAIN PROJECT SITE

MARCH 24 THROUGH 27, 2003

Prepared by: _____ Date: _____
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Navarro Quality Services

Approved by: _____ Date: _____
R. Dennis Brown
Director
Office of Quality Assurance

1.0 EXECUTIVE SUMMARY

The Office of Civilian Radioactive Waste Management (OCRWM) conducted a compliance-based audit at the Bechtel SAIC Company, LLC (BSC) Yucca Mountain Project (YMP) site on March 24-27, 2003. The audit was conducted to evaluate BSC's implementation of DOE/RW-0333P, Revision 12, *Quality Assurance Requirements and Description* (QARD), and to determine the adequacy of corresponding implementing procedures. Both were found to be effective and adequate, with the exception of three conditions adverse to quality.

The three conditions adverse to quality resulted in the issuance of two Deficiency Reports (DR) and one Quality Observation (QO). DRs BSC(O)-03-D-133 and BSC(O)-03-D-134 identified conditions adverse to quality in the areas of control of measuring and test equipment (M&TE) and scientific investigation. QO BSC(O)-03-O-075 was written to address a condition in the area of nonconformances.

The audit team evaluated the effectiveness of corrective actions for nine previously identified and closed DRs. The audit team determined the corrective actions to preclude recurrence were effective for these DRs.

A best practice was noted in the use of a Source Verification Plan (SVP) that was prepared for procurement of electric locomotives. Though this procurement was not subject to QARD requirements, a SVP was developed to verify procurement document requirements, including a line-by-line verification of the YMP site specification.

2.0 SCOPE

The audit team conducted a compliance-based audit of BSC at the YMP site. The audit team, through interviews of cognizant personnel, reviews of documentation, and the evaluation of procedures, assessed the adequacy and effectiveness of implementation of applicable portions of the QARD.

The audit team reviewed the status of nine closed deficiency documents to determine the effectiveness of completed corrective actions by BSC.

In accordance with the approved audit plan, the following QA Program sections were evaluated:

QARD Program Sections

1.0	Organization
2.0	QA Program
3.0	Design Control
4.0	Procurement Document Control
5.0	Implementing Documents
6.0	Document Control

7.0	Control of Purchased Items and Services
8.0	Identification and Control of Items
9.0	Control of Special Processes
10.0	Inspection
12.0	Control of Measuring and Test Equipment
13.0	Handling, Storage, and Shipping
14.0	Inspection, Test and Operating Status
15.0	Nonconformances
16.0	Corrective Action
17.0	Quality Assurance Records
Supplement I	Software
Supplement II	Sample Control
Supplement III	Scientific Investigation
Supplement IV	Field Surveying
Supplement V	Control of the Electronic Management of Data

3.0 AUDIT TEAM

John R. Doyle, Audit Team Leader/Navarro Quality Services (NQS)
Patrick V. Auer, Auditor/NQS
James E. Flaherty, Auditor, NQS
Kristi A. Hodges, Auditor/NQS
Robert A. Toro, Auditor/NQS
Harry C. White, Jr., Auditor/Office of Quality Assurance (OQA)
John Sanchez, Observer/National Nuclear Security Administration, Nevada Test Site

4.0 AUDIT TEAM MEETINGS AND PERSONNEL CONTACTED

A pre-audit meeting was conducted at BSC's YMP site offices on Monday, March 24, 2003. Daily debriefings were held to apprise the BSC management and staff of the progress of the audit and any identified conditions adverse to quality. A post-audit meeting was conducted at the same BSC offices on Thursday, March 27, 2003. Personnel contacted during the audit, including those who attended the pre-audit and post-audit meetings, are listed in Attachment 1, "Personnel Contacted During the Audit."

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Effectiveness

The audit team concluded that, with the exception of those areas where conditions adverse to quality were identified, BSC is satisfactorily and effectively implementing the examined portions of the QA Program and applicable implementing procedures.

5.2 Audit Activities

Attachment 2, "Summary Table of Audit Results," provides the results for each QA Program section audited. The details of the audit, including the objective evidence reviewed, are documented in the audit checklist. The checklist is maintained as a QA record.

5.3 Summary of Conditions Adverse to Quality

The audit identified conditions adverse to quality, which resulted in the issuance of two DRs and one QO.

Synopses of the documented conditions adverse to quality are detailed below. The DRs have been transmitted to BSC under separate letter.

5.3.1 Deficiency Reports

BSC(O)-03-D-133

AP-12.1Q, Revision 0, ICN 2, *Control of Measuring and Test Equipment and Calibration Standards*, Section 5.3.1, requires that calibration documentation for internally calibrated M&TE identify the procedure utilized for the calibration and its revision number. Contrary to this requirement, after a review of 36 field-related calibration reports, three calibration reports generated by the Field Engineering Survey Group and Sample Management Facility (SMF) did not identify the revision level of the procedure used for the calibration.

BSC(O)-03-D-134

AP-SIII.3, Revision 1, ICN 2, *Submittal and Incorporation of Data to the Technical Data Management System*, Section 5.1.1, requires that the Data Originator/Preparer develop a Records Road Map for data that are qualified, acquired, or developed on (or after) June 30, 1999, and submitted to the Technical Data Management System (TDMS). Contrary to this requirement, six of seven Data Tracking Numbers reviewed, generated by the SMF and the Field Engineering Survey Group, were submitted to the TDMS without a Records Road Map.

5.3.2 Quality Observations

The QO is used to document a condition adverse to quality that is isolated in nature, has no residual impact, and requires only remedial action.

BSC(O)-03-O-075

AP-15.2Q, Revision 1, *Control of Nonconformances*, Section 5.2.1, requires that Nonconformance Reports (NCR) be dispositioned within 30 days of issuance. Contrary to this requirement, a review of nine NCRs revealed that the disposition of NCR USGS-03-0019 had not been provided within the 30-day requirement.

5.3.3 Follow-Up of Previously Issued Deficiency Documents

The following previously issued DRs were reviewed for effective corrective action. It was determined that no repetitive issues were associated with the conditions summarized below:

BSC-02-D-057 identified self-assessments that evaluated the effectiveness of corrective actions to DRs that did not show distribution to the Director, OQA, contrary to AP-2.20Q, Revision 1, *Self Assessments*, requirements.

BSC(B)-02-D-106 documented that routine site checks were not performed at meteorological stations 1, 2, 4, and 9 in accordance with LP-MM-003Q, Revision 0, *Routine Operations and Maintenance of Meteorological Equipment*.

BSC(B)-03-D-002 identified the lack of required information on SMF Out-of-Calibration Reports, contrary to AP-12.1Q, Revision 0, ICN 2.

BSC(B)-03-D-003 identified that LP-OM-036Q, Revision 0, ICN 1, *Accuracy Test for Electronic Distance Meters*, failed to include a requirement to enter relative humidity data while performing surveying activities.

BSC(B)-03-D-027 cited hold tags were not identified as being utilized for 5 of 11 NCRs as per AP-15.2Q, Revision 1.

BSC(B)-03-D-029 identified that the NCR form section, "Description of Condition," did not have the "Yes" block checked for "Item" as per AP-15.2Q, Revision 1.

BSC(B)-03-D-061 documented that the Borehole Access and Completion Log was not maintained with all the required information as per AP-2.28Q, Revision 0, *Borehole Protection and Access*.

BSC(B)-03-D-067 identified that a Software User Request was not completed for an individual utilizing Wildsoft Version 1.65 software as per AP-SI.1Q, Revision 4, *Software Management*.

BSC(O)-03-D-079 identified that adequate justification was not provided for NCR dispositions of “conditional release” as per AP-15.2Q, Revision 1.

6.0 LIST OF ATTACHMENTS

Attachment 1, “Personnel Contacted During the Audit”
Attachment 2, “Summary Table of Audit Results”

**ATTACHMENT 1
PERSONNEL CONTACTED DURING THE AUDIT**

Name	Organization/Title	Pre-Audit Meeting	Contacted During Audit	Post-Audit Meeting
Angela Bass	BSC/Site Records Specialist		X	
Greg Bates	BSC/Field Engineering Survey Group/Chief Surveyor		X	X
Ken Beall	BSC/ Commitments Management Manager	X	X	X
James Blaylock	OQA/General Engineer			X
Charles Buckey	BSC/Assistant Lead Procedures Project	X	X	X
Laurie Clark	BSC/Regional Data Analysis, Data Coordinator		X	
James Costeel	BSC/Warehouse Foreman		X	
Dan Cozzolino	BSC/Measuring & Test Equipment Custodian		X	
Larry Croft	BSC/Environmental Safety & Health Information Analysis & Management, Manager	X	X	X
Randy Cunningham	BSC/Field Engineer		X	
Jayne Davis	BSC/Environmental Safety & Health, Deputy Manager			X
John Devers	BSC/Site Quality Assurance Specialist		X	
Ed Fitch	BSC/Field Engineer		X	
Leon Fossum	BSC/Site Operations Manager	X	X	X
Paul Fransioli	BSC/Radiation Programs Senior Environmental Scientist		X	
Rhonda Griffith	BSC/Work Order Records Coordinator		X	
Robert Hartstern	BSC/Quality Assurance Verification Manager			X
James Hayes	BSC/Site Engineering Manager		X	
Katherine Ho	BSC/Records Road Map Coordinator		X	
William Howard	BSC/Site Management Facility Geologist		X	
Gary James	BSC/Material Specialist/Expediter			
Rudy Johnson	BSC/Field Engineer	X	X	X
William Johnson	BSC/Level III Inspector		X	
Gary Jones	BSC/Radiation Programs Senior Environmental Scientist		X	
Robert Joyce	BSC/Maintenance Operations Manager	X	X	X
Marilyn Kavchak	NQS/Quality Assurance Specialist			X
Gerald Kieffer	BSC/Design Engineer		X	
Kevin Krank	BSC/Suspect/Counterfeit Items Coordinator		X	
Don Krisha	BSC/Quality Assurance Manager			X
Chris Lewis	BSC/Sample Management Facility Manager	X	X	X
Bert Marler	BSC/Training Specialist		X	
John Martin	BSC/Site Quality Manager	X	X	X

Name	Organization/Title	Pre-Audit Meeting	Contacted During Audit	Post-Audit Meeting
Scott McWhorter	BSC/Warehouse/Teamster		X	
Rod Moore	BSC/Site Environmental Safety & Health Manager	X		
Larry Morrison	BSC/Lead Design Engineer	X	X	X
Thom Morse	BSC/Field and Procurement Manager	X	X	X
Martha Mustard	USGS/Hydrologist			X
Tom Myatt	BSC/Lead Planner		X	
Brian Newman	BSC/Field Engineer		X	
Richard Noel	BSC/Site Quality Assurance Inspector		X	
Nelson O'Connor	BSC/Construction Site Superintendent	X		
Ed Opelski	NQS/Programs & Policy Manager			X
Dave Osborne	BSC/Quality Control Supervisor	X	X	X
Norm Payton	BSC/Material Specialist		X	
Mike Pitterle	BSC/Sample Management Facility Geologist		X	
Dave Prusinski	BSC/Warehouse Teamster		X	
Robert Regan	BSC/Surveyor Technician		X	
Bruce Reinert	LANL/Test Coordination Office Field Test Representative	X		
Steven Ricks	BSC/Quality Control Inspector		X	
Pete Roesner	BSC/Regional Data Analysis	X	X	
Leonard Savastio	BSC/Project Field Engineer Manager	X	X	X
Bill Sinclair	BSC/Operations Manager	X		
Donna Sinks	BSC/U.S. Geological Survey Onsite Representative			X
Chuck Taylor	BSC/Quality Control Engineering Specialist		X	
Les Wagner	NQS/Verification Manager			X
Doug Weaver	LANL/Test Coordination Office Manager			X
Rick Weeks	BSC/Site Science Quality Assurance Specialist		X	
Jon West	BSC/Field and Environmental Engineer		X	
Judy Wetzel	BSC/Lead Site Records/Document Control		X	X
Albert C. Williams	OQA/General Engineer			X
E. K. Williams	BSC/QC Engineering Supervisor	X	X	X
John Williamson	BSC/Craft Superintendent		X	
Armon Wilson	BSC/Material Specialist		X	
Ken Wolverton	BSC/Regional Data Analysis, Environmental Engineer	X	X	X
Fred Zinkevich	BSC/Projects Senior Engineer	X	X	X

Legend: BSC - Bechtel SAIC Company, LLC
LANL - Los Alamos National Laboratory
NQS - Navarro Quality Services

OQA - Office of Quality Assurance
USGS - U.S. Geological Survey

ATTACHMENT 2

SUMMARY TABLE OF AUDIT RESULTS

QA Program Section	Implementing Documents	Checklist Page	Deficiency Reports	Quality Observations	Recommended Actions	Program Adequacy	Procedure Compliance	Overall
1	LP-1.0Q-BSC, Rev. 0	1 - 3	N	N	N	SAT	SAT	SAT
2	AP-2.1Q, Rev. 2, ICN 1	4	N	N	N	SAT	SAT	SAT
	AP-2.20Q, Rev. 1	5 - 6						
	AP-2.23Q, Rev. 1	7 - 11						
	AP-2.28Q, Rev. 0	12 - 14						
	LP-ENG-012Q-BSC, Rev. 0	15 - 17						
3	AP-3.19Q, Rev. 2, ICN 1	18 - 27	N	N	N	SAT	SAT	SAT
	AP-3.24Q, Rev. 0, ICN 5	28 - 36						
	LP-3.22Q-BSC, Rev. 0, ICN3	37 - 38						
	LP-3.30Q-BSC, Rev. 1	39 - 42						
	LP-3.33Q-BSC, Rev. 0	43 - 44						
4/7	LP-CON-002Q-BSC, Rev. 0, ICN 2	45 - 46	N	N	N	SAT	SAT	SAT
	AP-7.4Q, Rev. 5, ICN 3	47 - 49						
	AP-7.5Q, Rev. 1	50 - 51						
	AP-7.7Q, Rev. 1	52 - 55						
	LP-4.5Q-BSC, Rev. 2, ICN1	56 - 58						
	LP-PMM-004Q-BSC, Rev. 0, ICN 1	59 - 61						
	LP-PMM-005Q-BSC, Rev. 0, ICN 1	62 - 65						
	LP-PMM-006Q-BSC, Rev. 0, ICN 2	66 - 73						
5	LP-7.2Q-BSC, Rev. 0, ICN 1	74 - 76	N	N	N	SAT	SAT	SAT
	AP-5.1Q, Rev. 3, ICN 3	77 - 81						
6	AP-6.1Q, Rev. 7	82 - 84	N	N	N	SAT	SAT	SAT
8/13	LP-CON-006Q-BSC, Rev. 2, ICN 1	85 - 90	N	N	N	SAT	SAT	SAT
	LP-CON-007Q-BSC, Rev. 1, ICN 1	91 - 95						

ATTACHMENT 2 (Continued)
SUMMARY TABLE OF AUDIT RESULTS

QA Program Section	Implementing Documents	Checklist Page	Deficiency Reports	Quality Observations	Recommended Actions	Program Adequacy	Procedure Compliance	Overall
15	AP-15.2Q, Rev. 1	142-146	N	BSC(O)-03-O-075	N	SAT	UNSAT	SAT
16	AP-16.1Q, Rev. 5	147-148	N	N	N	SAT	SAT	SAT
	AP-16.4Q, Rev. 2	149						
17	AP-17.1Q, Rev. 2, ICN 3	150-153	N	N	N	SAT	SAT	SAT
SI	AP-SI.1Q, Rev. 4	154-155	N	N	N	SAT	SAT	SAT
SII	LP-SMF-001Q, Rev. 0, ICN 1	156-163	N	N	N	SAT	SAT	SAT
	LP-SMF-003Q, Rev. 0, ICN 1	164-166						
	AP-SII.3Q, Rev. 0	167-168						
	LP-SMF-002Q, Rev. 1, ICN 2	169						
	LP-SMF-004Q, Rev. 0	169						
	LP-SMF-005Q, Rev. 0	169						
	AP-SII.1Q, Rev. 0	169						
SIII	AP-SIII.3Q, Rev. 1, ICN 2	170-174	BSC(O)-03-D-134	N	N	SAT	UNSAT	SAT
SIV	LP-OM-038Q-BSC, Rev. 0, ICN 1	175-177	N	N	N	SAT	SAT	SAT
SV	LP-OM-035Q-BSC, Rev. 0, ICN 1	178-180	N	N	N	SAT	SAT	SAT
	AP-SV.1Q, Rev. 0, ICN 3	181-182						
TOTAL			2	1	NONE	SAT	SAT	SAT

Legend: N - None
SAT - Satisfactory
UNSAT - Unsatisfactory